REMARKS

Claims 1-49 are pending in the present application. Reconsideration is respectfully requested for the following reasons.

Claims 1-12 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Japanese Patent No. JP07110216 to Hiyoshi in view of U.S. Patent No. 4,824,250 to Newman and Japanese Patent No. JP09049706 to Hiyoshi.

The requirements for making a *prima facie* case of obviousness are described in M.P.E.P. §2143 as follows:

> To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.
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> The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

M.P.E.P. §2143.01 provides further guidance as to what is necessary in showing that there was motivation known in the prior art to modify a reference teaching. Specifically, M.P.E.P. §2143.01 states:

> The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990).

In proceedings before the Patent and Trademark Office, the Examiner bears the burden of establishing a *prima facie* case of obviousness based upon the prior art. *In re Fritch,* 23 USPQ2d 1780, 1783 (Fed. Cir. 1992); M.P.E.P. §2142. Applicant respectfully asserts that the Examiner has not yet met the Examiner's burden of establishing a *prima facie* case of

obviousness with respect to the rejected claims. Consequently, the Examiner's rejection of the subject claims is inappropriate, and should be withdrawn.

Claim 1 defines a lensless method for measuring the amount which an object to be measured has moved in a plane and back-and-forth using a granular speck pattern generated by a reflected laser beam in non-contact fashion. The method includes, among other things, irradiating an object to be measured with a laser beam, directly detecting the granular speck pattern generated by the reflecting laser beam by a detector and using the detected speck pattern as an index. The method further includes moving the object toward or away from the detector, calculating the amount of movement of the object based upon the movement of a new granular speck pattern corresponding to the moved position of the object with respect to said index, and displaying a result of the calculation as a numerical value of the measured amount of movement.

Claim 2 defines a lensless apparatus for measuring an amount which an object to be measured has moved in a plane and back and forth using a granular speck pattern generated by a reflecting laser beam. The apparatus includes, among other things, a laser projector to generate a granular speck pattern corresponding to a rough surface of an object to be measured, a line sensor to directly pick up without a lens said granular speck pattern used as an index, an A/D converter coupled to said line sensor to convert an analog signal supplied from said line sensor to a digital signal, a processing unit coupled to the A/D converter to calculate the amount of movement of said object toward and away from said sensor on the basis of movement of the granular speck in said pattern with respect to a change in the pixel interval of said granular speck pattern picked up by said line sensor and represented by said A/D converted signal, and a display coupled to said processing unit to display the amount of movement calculated by said processing unit.

Claim 6 defines a lensless apparatus for measuring the amount which an object to be measured has moved in a plane and back and forth using a granular speck pattern generated by a reflecting laser beam. The apparatus includes, among other things, a laser projector for generating a granular speck pattern corresponding to the surface of an object to be measured, a line sensor positioned to detect directly without a lens said granular speck pattern as an index,

and an electrical circuit coupled to said line sensor for calculating the amount of movement of said object toward and away from said sensor on the basis of movement of the granular speck in said pattern with respect to a pixel interval of said granular speck pattern picked up by said line sensor and displaying the amount of movement calculated by said electrical circuit.

Claim 7 defines a lensless method for measuring the amount which an object to be measured has moved by detecting a granular speck pattern reflected by a laser beam. The method includes steps of, among other things, irradiating an object to be measured with a laser beam, directly detecting a granular speck pattern generated by the reflecting laser beam by a detector and using the detected pattern as an index, moving the object with respect to said detector, calculating the amount of movement of the object based upon movement of the granular speck pattern corresponding to the moved position of the object with respect to said index, and displaying a result of the calculation as a numerical value of the measured amount of movement.

Claim 8 defines a lensless apparatus for measuring the amount which an object to be measured has moved using a granular speck pattern generated by a reflecting laser beam is provided. The lensless apparatus includes, among other things, a laser source for generating a granular speck pattern corresponding to a rough surface of an object to be measured, a line sensor positioned to detect directly without a lens said granular speck pattern as an index, a processing unit coupled to said line sensor to calculate the amount of movement of said object on the basis of movement of a granular speck in said granular speck pattern with respect to a pixel interval of said granular speck pattern detected by said line sensor, and a display coupled to said processing unit to display the amount of movement calculated by said processing unit.

In regard to the first criterion of obviousness, there is no suggestion or motivation for combining the cited references for the rejection of a claims 1-12. Applicant notes that according to §2142 of the M.P.E.P.:

> The initial burden is on the examiner to provide some suggestion of the desirability of doing what the inventor has done. "To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the

> teachings of the references." Ex parte Clapp, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985).

Furthermore, according to the same section:

> The examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness.

> According to the Office Action, "[i]t would have been obvious to one of ordinary skill in the art at the time of applicant's invention from the teachings of Fox to modify the fluid passageway of Ward by using multiple openings in the air tube to permit a greater spread of the dry air along the passageway."

According to the Office Action, "Hiyoshi '216 does not mention...moving said object toward and/or away from said detector and measuring the amount which said object has moved back and forth." Page 4 of the Office Action. Furthermore, according to the Office Action, the Hiyoshi '216 system was modified in view of the Newman '250 patent to include the teaching of the Newman '250 lensless sensing technique. Accordingly, the Hiyoshi '216 disclosure as modified by the Newman '250 patent does not disclose moving an object toward and/or away from a detector and measuring the amount which the object has moved back and forth. The Office Action has further stated that:

> It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the teaching of Hiyoshi '706 in the Hiyoshi '216 system in order to provide a method and apparatus that can measure the movement of an object toward and way from the detector in non-contacting fashion (Hiyoshi '706, Abstract).

There is no suggestion or motivation either, in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify a combination of Hiyoshi '216 and the Newman '250 patent to provide an apparatus than can measure the movement of an object toward and away from a detector. Since the object disclosed in the Hiyoshi '216 patent as modified by the Newman '250 patent does not move toward or away from a detector or line sensor, there is no suggestion or motivation for modifying the combination to allow for measuring movement of an object toward or away from a detector. Accordingly, there is no suggestion or motivation, either in the references themselves or in the

knowledge generally available to one of ordinary skill in the art, to combine the reference teachings. Therefore, claims 1, 2, 6, 7 and 8 are in condition for allowance.

In regard to the third criterion of obviousness, the prior art references do not teach or suggest all of the claim limitations. Even if it would have been obvious to combine the Hiyoshi '216 patent, the Newman '250 patent and the Hiyoshi '706 patent, any resulting combination as set forth in the Office Action would not result in moving the object toward or away from the detector as defined in claim 1. Accordingly, Applicant submits that the rejection as set forth in the Office Action does not include moving an object toward or away from a detector and that there is no suggestion or motivation for moving an object toward or away from a detector or a line sensor as set forth above. Accordingly, claim 1 is in condition for allowance.

Claims 18 and 19 depend from claim 1, and since claim 1 defines patentable subject matter as discussed above, claims 18 and 19 define patentable subject matter. Furthermore, Applicant submits that claim 18 and 19 individually include subject matter not disclosed or suggested by the art of record. Accordingly, claims 18 and 19 are in condition for allowance.

Claims 3-5 and 20 depend from claim 2, and since claim 2 defines patentable subject matter as discussed above, claims 3-5 and 20 define the patentable subject matter. Furthermore, in regard to claim 4, the prior of record does not disclose or suggest a light shield position in front of a line sensor, wherein the light shield comprises a tube. Likewise, in regard to claim 5, the prior of record does not disclose or suggest a tube that is cylindrical. Furthermore, Applicant submits that the prior of record does not disclose or suggest the features of claim 20. Accordingly, claims 3-5 and 20 are in condition for allowance.

Claims 21 and 22 depend from claim 6, and since claim 6 defines patentable subject matter as discussed above, claims 21 and 22 define patentable subject matter. Furthermore, Applicant submits that the prior of record does not disclose or suggest the features of claims 21 and 22. Accordingly, claims 21 and 22 are in condition for allowance.

Claims 23 and 24 depend from claim 7, and since claim 7 defines patentable subject matter as discussed above, claims 23 and 24 define patentable subject matter. Furthermore,

Applicant submits that the prior of record does not disclose or suggest the features of claims 23 and 24. Accordingly, claims 23 and 24 are in condition for allowance.

Claims 9-12 and 25 depend from claim 8, and since claim 8 defines patentable subject matter as discussed above, claims 9-12 and 25 define patentable subject matter. Furthermore, in regard to claim 10, the prior of record does not disclose or suggest the light shield that comprises a tube. Likewise, in regard to claim 11, the prior of record does not disclose or suggest that the tube is cylindrical. Furthermore, Applicant submits that the prior of record does not disclose or suggest the features of claim 25. Accordingly, claims 9-12 and 25 are in condition for allowance.

Claims 13-17 have been rejected under 35 U.S.C §103(a) as being unpatentable over Hiyoshi '216 in view of the Newman '250 patent, Hiyoshi '706 and U.S. Patent No. 4,798,469 to Burke. The requirements for making a *prima facie* a case of obviousness are described above. Furthermore, as described above, there is no suggestion or motivation for combining Hiyoshi '216, the Newman '250 patent and Hiyoshi '706. Accordingly, there is no suggestion or motivation for combining Hiyoshi '216, the Newman '250 patent, Hiyoshi '706 and the Burke '469 patent. Furthermore, in regard to claim 16, the prior of record does no disclose or suggest a light shield that comprises a tube. Likewise, in regard to claim 17, the prior art of record does not disclose or suggest a tube that is cylindrical. Accordingly, claims 13-17 are in condition for allowance.

New claims 26-49 have been added and are submitted to include patentable subject matter. Specifically, the prior of record does not disclose or suggest detecting a granular speck pattern generated by a reflecting laser beam by a detector in an environment, wherein the environment is not a darkroom, or wherein a line sensor is able to directly pick up a granular speck pattern in an environment that is not a darkroom. Accordingly, claims 26-49 are in condition for allowance.

All pending claims 1-49 are believed to be in condition for allowance, and a notice of allowability is therefore earnestly solicited.

Respectfully submitted,

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